PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application Of:	)	
	)	
Paul LUCIW, et al.	)	Group Art Unit: 1813
	)	
Serial No. 08/442,750 and Serial No. 08/443,077	)	Examiner: M. Zeman
	)	
Filed: May 17, 1995	)	Dkt. Nos.0035.013 and 0035.019

For: HUMAN IMMUNODEFICIENCY VIRUS (HIV) NUCLEOTIDE SEQUENCES, RECOMBINANT POLYPEPTIDES, AND APPLICATIONS THEREOF

DECLARATION

Honorable Assistant Commissioner
for Patents
Washington, D.C. 20231

Sir:

I, John A.T. Young, do hereby declare as follows:

1. I received my Ph.D. in Human Genetics from Imperial Cancer Research Fund and University College, London, United Kingdom in 1987 having previously received a B.S. in Biochemistry from the University of Dundee in 1983.

2. I am currently an Assistant Professor, Department of Microbiology and Molecular Genetics, Harvard Medical School. My Curriculum Vitae is attached as Exhibit 1.

3. I have read and understand Luciw et al. applications Serial No. 08/442,750 and Serial No. 443,077 and Luciw et al. application Serial No. 06/667,501 ('501).

4. The HIV sequences provided in the '501 parent application enabled one of ordinary skill in the art in October 1984 to identify antigenic HIV peptides ie: containing an immunogenic

amino acid sequence. To demonstrate this, I performed a hydrophilicity analysis of the ARV-2 Env sequence, according to the Hopp protocol (Hopp 1981, Hopp 1983). The directions in Hopp, together with the hydrophilicity values given in Hopp 1981, permit a straightforward analysis that was easily within the skill of the art in October 1984. The confirmation of antigenicity was also within the skill of the art in 1984. An antigen could be screened by using it in a prior art immunoassay. This is the technique that is, in fact, disclosed in the Hopp references.

5. Employing the Hopp protocol, the most hydrophilic region of ARV-2 Env, was identified as residues 738-743 (ERDRDR). Peptides derived from HIV Env that contain these amino acid residues are recognized by a proportion of AIDS patient antisera as demonstrated by later actual tests. (Broliden 1992, Goudsmidt 1990, Kennedy 1986). The second-most hydrophilic region was identified as residues 653-658 (EKNEQE). Peptides containing this region of HIV Env are also recognized by sera from HIV infected individuals (Broliden 1992, Goudsmit 1990, Krowka 1991). The third most hydrophilic region of ARV-2 Env residues 733-738 (EEEGGE), overlapped the first hydrophilic region. Peptides containing this region of HIV Env are recognized by sera from HIV infected individuals. (Broliden 1992, Goudsmidt 1990, Kennedy 1986) The region containing residues 505-510 (QREKRA) was also identified as being highly hydrophilic. This finding was noted using the same computer analysis by Pauletti (1985). Peptides derived from HIV Env containing all or most of these residues are recognized by AIDS patient antisera (Broliden 1992, Kennedy 1987, Krowka 1991, Meshcheryakova 1993, Palker 1987, Streckert 1992).

6. Employing the Hopp protocol, the most hydrophilic region of ARV-2 Gag, was identified as residues 102-107 (EKIEEE). Peptides derived from HIV Gag that contain these amino acid residues are recognized by a proportion of AIDS patient antisera as demonstrated by later actual tests. (Jiang 1992). The second-most hydrophilic region was identified as residues 109-114 (NKSKKK). Peptides containing this region of HIV Gag are recognized by sera from HIV infected individuals (Jiang 1992).

7. The HIV sequences provided in the '501 parent application also enabled one of ordinary skill in the art in October, 1984 to identify antigenic HIV peptides by still other techniques. One approach known in the art, was to generate one or a panel of several peptides derived from the polypeptide sequence and test each peptide for antibody reactivity.

8. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 2/18/97

By: _____
John A.T. Young